

Production of aluminium strip with micron tolerances. (Cont.)
 installation used are illustrated. It was found that by increasing the number of passes on 2-high rolling mills and correct selection of lubricant the percentage of strip with thickness tolerance of ± 0.005 mm can be increased 42%; the proportion rises to 51% with a foil mill. The proportion does not rise if 3- or 4-high mills are used, but a mill with 12 rolls gives a proportion of 68.5%. Better results are obtained by the drawing method, the proportion then being 93%, 80% being 0.5 ± 0.003 mm thick. A simple design of drawing installation is used, with a productivity of 50 and 100 kg/hour for narrow and wide strip, respectively. It was found that with the technology adopted thickness measurements on specimens cut from the front and back ends of the strip were within ± 0.003 mm of the thickness at any part of the strip. Work described has enabled the large scale production of aluminium strip in long lengths and to micron tolerances to be organised, this product being necessary for the production of variable-capacity condensers. The technology is also applicable to other metals and other thicknesses. There are 3 figures, 7 tables and 4 Slavic references.

Card 2/2

ASSOCIATION: The imeni Voroshilova Works (Zavod im. Voroshilova)
 AVAILABLE:

CHERNYAK, S.N.

ALEKSEYEV, N.S.; BELYAYEV, A.P.; BUGAREV, L.A.; BUTOMO, D.G.; VASIL'YEV, Z.V.;
VERIGIN, V.N.; VOROB'YEV, G.M.; GAYLIT, A.A.; GOL'SHTEYN, P.M.;
GOKHSHTEYN, M.B.; ZHOLOBOV, V.V.; ZEDIN, N.N.; IVANOV-SKOBLIKOV, N.I.;
KUTEPOV, Ya.V.; LANDIKHOV, A.D.; MARAYEV, S.Ye.; MILLER, L.Ye.;
OL'KHOV, N.P.; PERLIN, I.L.; POSTNIKOV, N.N.; ROZOV, M.N.; CHERNYAK, S.N.;
CHUPRAKOV, V.Ya.; TSENTER, Ya.A.

Vladimir Oskarovich Gagen-Torn; obituary. TSvet.met. 27 no.5:67-68
S-O '54. (MIRA 10:10)

(Gagen-Torn, Vladimir Oskarovich, 1888-1954)

Chernyak, Semen Natanovich

PHASE I BOOK EXPLOITATION

343

Chernyak, Semen Natanovich, Candidate of Technical Sciences, and
Karasevich, Viktor Ivanovich, Engineer

Proizvodstvo fol'gi (Manufacturing of Foils) Moscow, Metallurgizdat,
1957. 271 p. 3,500 copies printed.

Reviewers: Postnikov, N. N., Engineer, and Sandler, G. G.; Eds.:
Miller, L. Ye., and Nikonorova, N. A.; Ed. of Publishing
House: El'kind, L. M.; Tech. Ed.: Karasev, A. I.

PURPOSE: The book is intended as a practical manual for engineering
and technical personnel of nonferrous metallurgical plants.
It can also serve as a means for increasing qualifications
of foremen and brigade leaders in foundries and sheet-
rolling shops.

Card 1/12

Manufacturing of Foils

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COVERAGE: The book presents basic data on manufacture of various types of foils made out of aluminum and other nonferrous metals and alloys. It describes all foil production processes from casting to surface finishing. There are 33 references, of which 26 are Soviet, and seven German, British, and French.

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AVAILABLE: Library of Congress

Card 12/12

JAG/wde

May 29, 1958

SOV/137-58-11-22353

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 72 (USSR)

AUTHOR: Chernyak, S. N.

TITLE: Improvement of Casting and Rolling Process at the Leningrad Nonferrous Metals Plant im. Voroshilov (Uovershenstvovaniye protsessov lit'ya i prokatki na Leningradskom zavode po obrabotke tsvetnykh metallov im. K. Ye. Voroshilova)

PERIODICAL: V sb.: Metallurgiya. Moscow-Leningrad, AN SSSR, 1957, pp 154-171

ABSTRACT: A description is offered of stages in the work at this plant, the final product, improvement in equipment and flowsheets, suggestions for improving operations, the role of production-efficiency engineers in improving production, and problems facing the plant in the future.

N. P.

Card 1/1

137-58-6-13560

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 340 (USSR)

AUTHOR: Chernyak, S.N.

TITLE: The Casting and Processing of Soviet Aluminum (Lit'ye i obrabotka sovetskogo alyuminiya)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 8, pp 101-108

ABSTRACT: A historical survey of casting and machining of domestic aluminum at the Voroshilov plant in Leningrad.

N.G.

1. Aluminum--Processing 2. Aluminum--Casting

Card 1/1

CHERNYAK S.N.

VORONOV, I.A.; CHERNYAK, S.N.; PRIKHOD'KO, V.Ye.; KARASEVICH, V.I.

Production of aluminum strip with micron tolerances. TSvet. met.
30 no.5:79-85 My '57. (MLRA 10:6)

1. Zavod im. Voroshilova.
(Aluminum)

(Rolling (Metalwork))

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 265 (USSR) SOV/137-59-3-6777

AUTHOR: Chernyak, S. N.

TITLE: Improving the Manufacture of Aluminized Iron (Usovershenstvovaniye proizvodstva alyuminirovannogo zheleza)

PERIODICAL: Tr. Mezhevuz. nauchno-tekhn. konferentsii na temu; "Sovrem. dostizh. prokatn. proiz-va". Leningrad, 1958, pp 176-181

ABSTRACT: High-quality aluminized iron (Al), an excellent Ni substitute in plates of vacuum tubes, may be obtained by combining a basic (2x200-mm strip of steel 08KP (containing $\leq 0.1\%$ C and supplied in coiled form, in a particularly soft condition in accordance with GOST 1050-57) with an Al (grade 99.5) coating strip, 0.2 mm thick and 120 mm wide, containing 1-1.5% Si and being also supplied in coiled form. The technological processes of the manufacture of the duplex metal include etching of the steel, polishing of the steel (both sides) and polishing of the Al (on one side) followed by rolling (R), combined with concurrent brazing of the Al to the steel, in a six-roll mill (160/350x150 mm) at a rate of 31 m/min, the degree of reduction amounting to 55% or more in one pass. R of the strips to a final

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Improving the Manufacture of Aluminized Iron

SOV/137-59-3-6777

thickness of 0.3, 0.2, 0.15, and 0.10 mm is performed without intermediate annealing. Final annealing (in a batch-type reheating furnace; the weight of the charge being 300 kg) at a temperature of 535-540°C requires 4-8 hours for the given thicknesses. The surface quality may be improved by gently cleaning one side of the Al layer with fine steel brushes after annealing in order to remove all traces of Al_2O_3 . One-sided plating of steel is accomplished in the same manner as two-sided plating, the only difference being that the steel is prepared on one side only. Experimental batches of Al- and Ni-coated steels were obtained in the form of strips of a thickness of 0.1-0.3 mm. One side of the 2-mm thick steel strip was plated with a 0.2-mm layer of Al containing 1-1.5% Si, the other with a 0.2-mm layer of Ni. The Al and Ni were subjected to a preliminary anneal. Both metals were brazed onto the steel strip by being passed through a six-roll stand without preheating in a single pass at a reduction amounting to 65% or more. Further cold rolling of the strip was conducted without intermediate annealing. The finished strip was annealed at a temperature of 650° at a drawing rate of 1.1 m/min. The depth of the cup in the Erichsen cupping test amounted to 5-6 mm for a finished strip 0.1 mm thick.

V. D.

Card 2/2

GORN, Aleksandr Grigor'yevich, inzh.; LISKOVETS, Simon Abramovich, inzh.;
CHERNYAK, Solomon Natanovich, inzh.; SHAPIRO, Iosif Abramovich,
inzh.; PONOMARENKO, S.A., red.; BOBROVA, Ye.N., tekhn.red.

[Experience in the demonstrative building of railroads] Opyt pokazatel'nogo stroitel'stva zheleznnykh dorog. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 143 p.
(MIRA 13:5)

(Railroads--Construction)

ACC NR: AT7004477

SOURCE CODE: UR/3245/66/000/002/0083/0086

AUTHOR: Chernyak, S. P.

ORG: Kiev Institute of Automation (Kiyevskiy institut avtomatiki)

TITLE: Photoelectric system for sorting steel sheets by length

SOURCE: Kharkov. Institut gornogo mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki. Pribory i sistemy avtomatiki, no. 2, 1966. Promyshlennaya telemekhanika (Industrial telemechanics), 83-86

TOPIC TAGS: photoelectric cell, sheet metal, steel ^{structure} ~~industry~~, rolling mill

ABSTRACT: A photoelectric system schematically described here will determine whether steel sheets passing on a conveyor belt at speeds of up to 3 m/sec are too long, too short, or acceptable. As in existing systems, the distance between the first and second photocell is taken as the minimum permissible sheet size, and the distance between the first and third photocells is taken as the maximum permissible size. A decision logic is discussed which permits classifying a sheet into one of three categories by operating the first photocell on reflected light and the other two on direct light, or by operating all three photocells on reflected light (the present methods allegedly require direct light for all three photocells). The logic diagram is presented and the possible decision paths corresponding to various sheet sizes are traced through this diagram. Orig. art. has: 2 figures.

SUB CODE: 13/ SUBM DATE: none

Card 1/1

USSR/General Biology. Individual Development. Sexual Cells.

B-4

Abstr Jour: Ref Zhur-Biol., No 20, 1958, 90344.

Author : Chernyak, S.S.

Inst :

Title : The Effect of the Cold Storage of Sperm on the Ratio of the Sexes in Rabbit Offspring.

Orig Pub: Dopovidn AN URSS, 1956, No 4, 408-413 (Ukrainian; res. Russ.)

Abstract: When sperm was stored at 0° for 15½ - 18½ hours and diluted with glucose-tartrate, the number of females in the offspring increases from 27.8 to 58.18% (in an experimental group of 55 rabbits) and stored for 22-42 hours to 69.23% (in an experimental group of 52 rabbits). There was no change in the rabbits' impregnability and

Card : 1/2

USSR/General Biology. Individual Development. Sexual Cells.

B-4

Abstr Jour: Ref Zhur-Biol., No 20, 1958, 90344.

fertility nor in the viability and the weight of the offspring when cold stored sperm was used. The author thinks this method may have practical significance in increasing the number of females in the progeny. --
A.V. Chuvayev.

ASSOCIATION: Ukrain's'kiy n. -d. ejsoerunebtak'niy institut ochnikh khvorob ta tkaninnoi terapii imeni Akademika V.P. Filatova. Predstavleno akademikom Akademii nauk USSR V.P. Filatovym.

Card : 2/2

CHERNYAK, S. S.: Master Biol Sci (diss) -- "The effect of preservation of sperm cells at low temperatures on the quality of the offspring of rabbits". Odessa, 1959. 18 pp (Min Higher Educ Ukr SSR, Odessa State U im I. I. Mechnikov), 170 copies (KL, No 13, 1959, 103)

22676

S/200/61/000/001/002/005
D223/D305

1.1800 also 4016, 1087

AUTHORS: Chernyak, S. S., Tolstikova, Ye. A., and Kuznetsov, R.A.

TITLE: Increase in resistance to wear of steels and cast irons
by the method of electrolytical sulphidation

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya,
no. 1, 1961, 25-30

TEXT: The sulphidation processing of metallic surfaces is widely
used in order to increase the resistance to wear and "gripping"
ability of machine parts and cutting tools. In a previous work
S. S. Chernyak and R. A. Kuznetsov (Ref. 1: Issledovaniye metodov
sul'fidirovaniya dlya uprochneniya rezhushchego instrumenta i det-
aley mashin (Investigation of Sulphidation Methods for Hardening
Cutting Tools and Machine Parts), TsBNTI, TsNIITMASH, M, 1959) give
the results of work on the chemical-thermal sulphidation of cutting
tools and the experimental data on the structure of sulphide film
on the metal. Chemical-thermal sulphidation although giving satis-
factory results in most cases suffers from: 1) Long sulphidation

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S/200/61/000/001/002/005
D223/D305

Increase in resistance...

of parts in salt solution; 2) Need to use costly salts in appreciable quantities and their careful preparation; (dehydration, special feeding conditions etc); 3) Specific conditions of treatment with salt solution. The study of electrolytic sulphidation was principally concerned with the effect of optimum current density and the duration of electrolysis. The effect of these factors on the resistance to wear was compared to the chemically nickel-treated parts. The sulphur content of sulphided parts, and the anti-scratch properties and microstructure were determined also. Sulphidation was done in an electrolytic bath with a capacity of 4 liters at a temperature of 90 - 98°C. The electrolyte was an aqueous solution of potassium thiocyanide with a concentration of 42.5 g/l or 85% and sodium hyposulphite of 7.5 g/l or 15% strength. The cathode was made of lead sheet and the anode consisted of the sulphided sample. The voltage used varied within the range of 10-12 volts. The investigation confirmed that the electrolytical sulphidation produces a dense and deep (up to 0.3 mm) sulphide layer on the metallic surface. The sulphur concentration is plotted against the distance from the metallic surface by the authors. The microstructure of

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Increase in resistance...

S/200/61/000/001/002/005
D223/D305

electrolytically sulphided samples was studied after etching by an aqueous solution of acetic acid. The depth of the sulphide layer for the constant current density varies with the time of electrolytical treatment of the samples, examples being given in tabulated form in the article. Microphotography has shown that the structure of electrically formed sulphide layers on the steel and cast iron are identical. The electrolytically sulphided samples were checked for scratching by the method described in Ref. 1 (Op. cit.) and results are given in Table 3. Legend: (1) Sample material; (2) Sample No; (3) Sample hardness after heat treatment. Hv.; (4) Condition of sulphidation; (5) Current density I, amp/dm²; (6) Time of processing; (7) Testing time mins.; (8) Results; (9) Modified cast iron; (10) Steel 40; (11) Steel 40X; (12) Not sulphided; (13) Does not scratch; (14) After 10 sec. catastrophic wear; (15) Does not scratch; (16) Negligible markings. As can be seen from Table 3 the samples subjected to electrolytical sulphidation possess increased anti-scratching properties. The frictional wear was tested using friction mixture M1. For steel samples a pressure of 100 kg was used and for cast iron 38 kg. The testing was done in 23 minute periods

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Increase in resistance...

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(1) Материал образца	(2) № образца	(3) Твердость образца после тер- мич. обра- ботки, НВ	Режим сульфидирова- ния		(7) Длитель- ность испытания, мин.	(8) Результаты
			(4) плотность тока, А, а/д.ж.	(5) длитель- ность процесса, мин.		
(9) Чугун моди- фициро- ванный	117	461	0,5	30	1,5	(13) задира нет
	104	477	0,5	60	1,5	.
	106	417	0,5	90	1,5	.
	114	241	(12) не сульфидирован.		1,0	через 10 сек. начался ка- тастрофич. износ
(10) Сталь 40	101	241	0,5	180	1,5	(14) задира нет
	15	407	0,5	60	1,5	(15) задира нет
	5	395	1,0	60	1,5	.
	18	425	1,5	60	1,5	.
(11) Сталь 40X	35	385	0,5	120	1,15	(16) задира нет
	36	400	1,0	60	1,25	.
	39	419	1,5	60	1,15	(17) незначит. риски

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Table 3

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Increase in resistance...

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which corresponds to 5000 revolutions of the roller. The products of wear were submitted for chemical analysis and the results are given in Table 4. Legend: (1) Sulphidation conditions; (2) Roller revolutions; (3) Current density a/dm^2 ; (4) Time hours; (5) to 5000; (6) from 5000 to 10000; (7) from 10000 to 15000; (8) Sulphur content %.

плотность тока $I, a/dm^2$	время, час.	до 5000	до 10000	до 15000
		(5)	(6)	(7)
содержание серы, %				
1,5	1,5	2,775	0,488	—
1,0	1,5	0,701	0,061	0,053
0,5	1,5	0,213	0,91	0,061

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Table 4

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Increase in resistance...

S/200/61/000/001/002/005
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The results obtained indicate the effect of current density on the properties of sulphided samples, i.e. the change from 0.5 to 1.5 amp/dm² affects greatly the wear resistance. The samples treated by chemico-thermal sulphidation, by chemical nickel plating and by gaseous cyanide treatment all show inferior properties compared with the electrolytical sulphidation. Before treatment, samples were degreased by benzene or an alkaline solution, containing 45 g/l NaOH, 95 g/l Na₂CO₃ and 10 g/l of Na₂SiO₃ then rinsed with water and dried. After sulphidation, they were washed with hot water, and then kept in hot oil at 100 - 110°C. After electrolytical sulphidation, the life of various tools tested increased 1.5 - 3 times. There are 4 tables, 5 figures and 3 Soviet-bloc references.

ASSOCIATION: Irkutskiy zavod tyazhelogo mashinostroyeniya (Irkutsk Plant of Heavy Machine Construction)

SUBMITTED: June 27, 1960

Card 6/6

SHUL'GINA, N.S.; CHERNYAK, S.S.

Biological activity of tissue preparations from various tissues
of animal origin. Uch.zap. UEIGB 5:293-301 '62 (MIRA 16:11)

*

ACCESSION NR: AR4044004

S/0058/64/000/006/EO49/EO49

SOURCE: Ref. zh. Fizika, Abs. 6E368

AUTHOR: Distler, G. I.; Ry*chkova, S. V.; Chernyak, T. Ye.; Chudakov, V. S.

TITLE: Use of the method of infrared polariscopy to study models of alloy junctions and the influence of mechanical processing on birefringence in Si crystals

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 16-21

TOPIC TAGS: IR polariscopy, alloy junction, silicon crystal, crystal, birefringence

TRANSLATION: Studies high-resistance n-type silicon single crystals grown by the Czochralski method in a vacuum, and He with resistivity of 20-100 ohm-cm. Birefringence in crystals is studied by the method of photoelectric infrared polariscopy. It is found that during crystal growth there arise stressed regions near the lateral face; the stresses reach up to 63 kg/cm^2 . For plates cut perpendicular to the axis of growth it is shown that stresses along the axis of the bar spread non-uniformly; maximum birefringence occurs at the ends of the bar. There were in-

Card 1/2

ACCESSION NR: AR4044004

vestigated plates out at an angle to the growth axis. In this case, stresses in regions with maximum birefringence in these plates are considerably smaller in value and spread more uniformly.

SUB CODE: SS, OP

ENCL: 00

Card 2/2

CHERTOK, Boris Yefimovich; TULA, F.A., inzh., retsenzent; ~~CHERNYAK, V.A.,~~
inzh., retsenzent; SKRYPIK, I.P., inzh., red.; ONISHCHENKO, N.P.,
red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Laboratory work on the technology of metals] Laboratornye raboty
po tekhnologii metallov. Moskva, Gos. nauchno-tekhn. izd-vo ma-
shinostroit. lit-ry, 1961. 181 p. (MIRA 14:7)
(Metallurgy--Laboratory manuals)

CHEERNYAK, V.A.

Veterinary pathology as a heading under comparative pathology.
Arkhn.pat. 21 no.1182-89 '59. (MIRA 13:12)
(VETERINARY PATHOLOGY)

CHERNYAK, V.A., kand.filosofskikh nauk

Studies of the causes of the vitality of the surviving traces
of religion. Vest.AN Kazakh.SSR 18.no.11:55-61 N '62.
(MIRA 15:12)

(Religion)

L 62913-65 EMT(m)/EMP(h)/EMA(d)/T/EMP(t)/EMP(k)/EMP(z)/EMP(b)/EMA(c) JD/HW

ACCESSION NR: AR5019139

UR/0137/65/000/007/D031/D031

SOURCE: Ref zh Metallurgiya, Abs 719

AUTHOR: Kolesnik B. P.; Chernyak V.

TITLE: Ball test method for determining tensile strength and yield point of high strength tube steels

CITED SOURCE: Sb. Proiz-vo trub. Vyp. 14 M., Metallurgiya, 1964, 128-132

TOPIC TAGS: pipe, high strength steel, tensile stress, yield stress

TRANSLATION: The article examines the ball test method for determining tensile strength and the yield point of high strength tube steels. After correcting the formulas, this method is applicable for the continuous testing of the reliability of petroleum grade tubes which are subjected to a two-stage treatment. Orig. art. has: 2 illus., 1 table, 9 literature titles. L. Kocherova

SUB CODE: MM

ENCL 0

Card 1/1

USSR

Reaction of cadmium salts with tartrates. V. K. Zolotukhin and V. E. Lisitskii. *Ukrain. Khim. Zhur.* 19, 287-76 (1963); *Referat. Zhur., Khim.* 1954, No. 17935. — The ppt. formed by mixing solns. of Cd salts with alkali metal tartrates has the compn. $\text{CdC}_2\text{H}_2\text{O}_4$. The amorphous salt $\text{CdC}_2\text{H}_2\text{O}_4$ dissolved in $\text{Na}_2\text{C}_2\text{H}_2\text{O}_4$ soln. In a soln. contg. a triple excess of Na tartrate, the equil. between $\text{Na}[\text{Cd}(\text{C}_2\text{H}_2\text{O}_4)_2]$ and $\text{CdC}_2\text{H}_2\text{O}_4$ was established at an appreciable concn. of the latter salt. The cryst. $\text{CdC}_2\text{H}_2\text{O}_4$ is sparsely sol. in H_2O (solv. product at 22° 7.3×10^{-4}) and in $\text{Na}_2\text{C}_2\text{H}_2\text{O}_4$. For titration of $\text{CdC}_2\text{H}_2\text{O}_4$ with NaOH to phenolphthalein or thymolphthalein, approx. 1 equiv. of alkali was used. In the presence of an excess of $\text{Na}_2\text{C}_2\text{H}_2\text{O}_4$, the amt. of alkali needed decreases and at 24-fold excess it becomes 0.7 equiv. In a soln. of Cd tartrate in excess Na tartrate, neutralized to pH approx. 9 (phenolphthalein), there are in equil. $\text{NaCdC}_2\text{H}_2\text{O}_4 \cdot \text{H}_2\text{O}$, possibly $\text{NaCdOH} \cdot \text{C}_2\text{H}_2\text{O}_4$, and some quantity of $\text{Na}[\text{Cd}(\text{C}_2\text{H}_2\text{O}_4)_2]$ and $\text{CdC}_2\text{H}_2\text{O}_4$. From weakly acid (pH 6.5-6.8) and weakly alk. (pH approx. 9) solns. of Cd tartrates, $\text{K}_4\text{Fe}(\text{CN})_6$ and H_2S pptd. corresponding salts. Cd cannot be detd. acidimetrically from the reaction between Cd salts and alkali tartrates. M. Hosh.

81

ACC NR: AP7001327

SOURCE CODE: UR/0371/66/000/005/0015/0019

AUTHOR: Chernyak, V. G. — Cernaks, V.; Dunina, A. A. — Dunina, A.; Larionov, M. G. — Larionovs, M.; Plyavinya, I. K. — Plavina, I.; Shamovskiy, L. M. — Samovskis, L.; Tale, A. K. — Tale, A.

ORG: Physics Institute AN LatSSR (Institut fiziki AN Latv. SSR)

TITLE: Photoscintillations of KCl-Tl excited in the F-band

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 5, 1966, 15-19

TOPIC TAGS: scintillation, light excitation, excitation spectrum, *f band*

ABSTRACT: An investigation was made of the rapid transfer of energy from F-centers to activator centers and of the time necessary for such transfer when the crystals are subjected to pulsed excitation. The investigation was based on the comparison of the kinetics of activator luminescence excited directly in the center of luminescence (Tl-scintillation) and in the F-absorption band (F-scintillation). KCl-Tl-F crystals (0.2 or 0.5 mol% Tl in melt) were irradiated with x- or gamma rays. The concentration of F-centers did not exceed $5 \times 10^{17} \text{ cm}^{-3}$. The crystals were placed in a metallic cryostat and excited with light pulses ($\sim 10^{-7}$ sec) from a spark. The excitation was applied alternately in the 247 and 560 nm bands. A coincidence was found between F-scintillation and Tl-scintillation with regard to their time

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ACC NR: AP7001327

characteristics in the range from room temperature to the temperature of liquid nitrogen. The time characterizing the slow exponential decay τ_{LC} (LC-long component) in F-scintillations changed from 2.5×10^{-7} sec to 5×10^{-5} sec with a change in temperature from 300 to 80K. At low temperatures, a sharp emission (short component-SC) of luminescence occurs which describes the form of the exciting spark pulse, as in the case of Tl-scintillation. The ratio of quantum yield of SC and LC of F-scintillation is the same as for Tl-scintillation in the entire range of measured temperatures, which shows that the overpopulation of the 3P_1 level with respect to the 3P_0 level at F-scintillation is the same as in the case of Tl-scintillation. The SC and LC of luminescence in F-scintillations relate to the activator luminescence of KCl-Tl, i.e., to the 305 nm band, but not to the 335 nm band, which corresponds to the hole centers. The maxima of the excitation spectra of F-scintillation and absorption spectra coincide and are in the region of 560 ± 5 nm. From the experimental results, it follows that the mechanism of F-scintillation formation is of the electron type. This means that during short-time crystal excitation in the F-absorption band, free electrons, which are generated in the conductivity zone, recombine with holes, which are localized due to x- or gamma-irradiation on the activator ion or close to it. This process is accompanied by the excitation of the activator. Orig. art. has: 2 figures. [JA]

SUB CODE: 20/ SUBM DATE: 06Dec65/ ORIG REF: 007/ ATD PRESS: 5109

Card 2/2

L 27602-66 EWT(1) IJP(c) GG

ACC NR: AP6018401

SOURCE CODE: UR/0020/65/162/001/0043/0045

AUTHOR: Achasov, N. N.; Rumer, Yu. B.; Chernyak, V. L.; Shirkov, D. V.. (Corresponding member AN SSSR)

ORG: Institute of Mathematics, Siberian Section, AN SSSR (Institut matematiki Sibirskogo otdeleniya AN SSSR)

TITLE: Formal dynamic model of unitary symmetry

SOURCE: AN SSSR. Doklady, v. 162, no. 1, 1965, 43-45

TOPIC TAGS: mathematic model, quantum mechanics

ABSTRACT: The purpose of the article is to construct a quantum-mechanical model, the degeneracy of whose levels will have a one-to-one correspondence with all representations of group $SU(3)$, each representation occurring only once. The model should possess not less than five degrees of freedom in accordance with the number of quantum numbers effecting the classification of states in group $SU(3)$ (p, q, Q, Y, T). The authors outline the method by which they obtained a spectrum with terms having a one-to-one correspondence with representations of group $SU(3)$: that is to say, corresponding to each representation $D(p, q)$ of group $SU(3)$ there is a term ω_{pq} with degeneracy the multiplicity of which equals $M(p, q) = (p + 1)(q + 1)(p + q + 2)/2$. The authors conclude that the adduced construction should be regarded as a certain formal model of unitary symmetry. The authors thank V. V. Serebryakov for the useful discussions. Orig. art. has: 6 formulas. [JPRS]

SUB CODE: 20, 12 / SUBM DATE: 15Jan65 / ORIG REF: 002

Card 1/1

CHERNYAK, V. N.

Subject : USSR/Engineering AID P - 2562

Card 1/1 Pub. 110-a - 1/16

Authors : Kuznetsov, N. V., Shcherbakov, A. Z., Kands. Tech. Sci.,
and Titova, Ye. Ya., Chernyak, V. N., Engs.

Title : Most efficient gas velocities and comparison of data of
heating surfaces operating under pressure

Periodical : Teploenergetika, 8, 3-10, Ag 1955

Abstract : The authors determine the most efficient velocity for gas
flow in economizers and superheaters on the basis of re-
search on heat transfer, aerodynamic resistance and scale
deposits in tubes. A comparison between different shapes
of heating surfaces is made in order to demonstrate pos-
sibilities for the improvement of convected sections in
the boiler design. Nine diagrams, 8 Russian references,
1935-1955.

Institution: All-Union Heat Engineering Institute

Submitted : No date

Chernyak, V. Ya. N.

AID P - 2761

Subject : USSR/Engineering

Card 1/1 Pub. 110-a - 3/14

Authors : Kuznetsov, N. V. and Shcherbakov, A. E., Kands.
Tech. Sci., Titova, E. Ya. and Chernyak, V. Ya. N.,
Engs.

Title : Optimal velocities of air and smoke gases in
air-heaters and a technical and economical compar-
ison of heated surfaces

Periodical : Teploenerg, 9, 18-21, S 1955

Abstract : Preheaters of different types, such as plate,
tubular, cast-iron ribbed and corrugated iron, and
their operation are discussed. The most efficient
velocity of air and gas in ducts is mathematically
analyzed with equations and tables. Five diagrams.
Three Russian references, 1946-1955.

Institution : All-Union Heat Engineering Institute

Submitted : No date

CHERNYAK, V.N., inzh.

Methods for profiling injection control valves. Elek. sta. 35 no.8:8-
14 Ag '64. (MIRA 17:12)

BARATOV, E.I., kand.tekhn.nauk; CHERNYAK, V.P., inzh.

"Heating of mine shafts" by M.M. Shemakhanov. Reviewed by
E.I. Baratov, V.P. Cherniak. Ugol' Ukr. 6 no.1:44 Ja '62.
(MIRA 15:2)

(Mining engineering)
(Shemakhanov, M.M.)

BARATOV, E.I.; CHERNYAK, V.P.

Improving the temperature conditions in lavas of deep mines
by heat draining. Zbir. prats' Inst. tepl. AN URSS no.22:
29-33 '61. (MIRA 16:6)

(Mine ventilation)

BARATOV, E.I., kand.tekhn.nauk; CHERNYAK, V.P., inzh.; CHIZHOV, B.D.,
kand.tekhn.nauk

Determining the rated parameters of outside air for purposes of
predicting and regulating the heat conditions of mines located
in areas with an extreme continental climate. Trudy Sem.po
gor.teplotekh. no.4:72-74 '62. (MIRA 15:8)

1. Institut teploenergetiki Ak. UkrSSR.
(Mine ventilation)

BARATOV, E.I., kand.tekhn.nauk; CHERNYAK, V.P., inzh.

Regulation of the heat conditions in mines located in permafrost
areas. Trudy Sem.po gor.teplotekh. no.4:94-100 '62. (MIRA 15:8)

1. Institut teploenergetiki AN UkrSSR.
(Mine ventilation--Cold weather conditions)
(Frozen ground)

BARATOV, E.I., kand.tekhn.nauk; CHERNYAK, V.P., inzh.

Regulating the heat conditions in mines located in areas with
an extreme continental climate. Trudy Sem.po gor.teplotekh.
no.4:101-105 '62. (MIRA 15:8)

1. Institut teploenergetiki AN UkrSSR.
(Mine ventilation)

SHCHERBAN', A.N., akademik; BARATOV, E.I., kand. tekhn. nauk; CHERNYAK,
V.P., kand. tekhn. nauk

System of mine air cooling with the use of cased holes.

Met. i gornorud. prom. no.6:53-54 N-D '65.

(MIRA 18:12)

1. AN UkrSSR (for Shcherban').

L 30350-66

ACC NR: AP6014733

(A)

SOURCE CODE: UR/0327/65/000/012/0010/0012

AUTHORS: Baratov, E. I. (Candidate of technical sciences)(Kiev); Chernyak, V. P. 4/9
(Candidate of technical sciences)(Kiev) 3

ORG: none

TITLE: Calculation of the efficiency of air conditioning in the control cabins of hoist-transport and excavation machines

SOURCE: Vodosnabzheniye i sanitarnaya tekhnika, no. 12, 1965, 10-12

TOPIC TAGS: ^{EXCAVATING MACHINERY} ~~cabin environment~~ air conditioning equipment, crane, heat transfer, heat balance, ventilation engineering, temperature / ERG-350/1000 ²⁶ EXCAVATING MACHINERY 10

ABSTRACT: Equations are derived for determining the temperature of the air leaving the interwall space and the temperature of the air leaving the cabin when air conditioning is used. The sequence for making heat calculations for air cooling is given. A practical calculation is made for cooling of the cabin of the ERG-350/1000 rotary excavator. The results of the calculations show that air cooling with thermal humidity treatment of the cabin air by means of a sprinkling chamber, when the temperature of the external air is 30--40C, ensures a cabin air temperature of 21--27.2C with a relative humidity of 0.7--0.75. At temperatures above 40C, dry conditioners should be used in conjunction with air cooling of the enclosures.

Card 1/2

UDC: 697.911

L 30350-66

ACC NR: AP6014733

O

Orig. art. has: 8 formulas, 1 table, and 2 figures.

SUB CODE: 13/

SUBM DATE: none

ORIG REF: 003

Card 2/2

92

COMMON ELEMENTS																										PROCESSES AND PROPERTIES INDEX																										1ST AND 2ND ORDER																										1ST AND 2ND ORDER																									
COMMON ELEMENTS																										PROCESSES AND PROPERTIES INDEX																										1ST AND 2ND ORDER																										1ST AND 2ND ORDER																									
<p>CA</p> <p>Determination of acetylene in liquid oxygen. V. S. Chernyak and I. I. Strizhevskii. <i>Antegennoe Delo</i> (U. S. S. R.) 7, No. 2, 16-17(1938).—Liquid O is evapd. and passed through a 3% ammoniacal soln. of AgNO₃. Acety- is detd. from the Ag₂C₂ formed. L. Jacovleff</p>																																																																																																							
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1ST AND 2ND ORDER
3RD AND 4TH ORDER

PROCESSES AND PROPERTIES INDEX

***Mechanical Properties of Special Steels and Non-Ferrous Metals at Low Temperature.** B. Smirnov and V. Chernjak (*Metallurg (Metallurgist)*, 1938, (8), 88-103).—[In Russian.] Results of tests are given for bronzes (I): copper 58.0, zinc 38.7, and lead 1.5%; (II): copper 57.14, zinc 40.75, lead 0.66, iron 0.90%, and traces of manganese, at room temperature and — 185° C.; and also for Duralumin (copper 4.33, magnesium 0.12, iron 0.84, manganese 0.64%) at room temperature, — 18° and — 183° C. The results are summarized below:

Material.	Temperature, °C.	Tensile Strength, Kg./mm. ²	Elongation, %	Striking, %	Brinell Hardness.	% Resistance, Kg./cm. ²
Bronze I.	+ 20	42-45	25.7	47.0	94	5-95
	— 183	58.0	36	32.35	124	5-32
Bronze II.	+ 20	36.5	22.3	10.0	94	5-23
	— 183	50.8	26.8	10.2	113	5-18
Duralumin.	+ 20	40-42	14-46	27.8	92	4-11
	— 18	43.5	17.5	26.8	104	4-56
	— 183	51.6	20.24	21.2	114	4-57

—N. A.

ASH-31A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<p>Investigation of the welding of red copper. <i>N. S. Chernyak, G. A. Alatyrtsev and S. N. Golubev. <u>Atom. Energ. Delo</u> 8, No. 7, 39-43; No. 8, 28-30 (1967); <u>Chem. Zentr.</u> 1938, 11, 165. Different variations of the conditions of welding of red Cu are described and the results judged on the basis of detn. of mech. strength, expansion and microstructure of the welded region. Welding with the addn. of ordinary Cu is possible. Active deoxidizing agents, such as P, must be added to the flux. Preliminary heating of the ends to be welded is unconditionally necessary.</i></p> <p>M. G. Moore</p>																										<p>9</p>																									
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1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>*Soldering with Solders Containing Small Amounts of Tin. V. S. Chernjak. <i>(Mashinostroitel' (Machinist), 1933, (1), 44-46).--[In Russian.]</i> Alloys containing lead 50-90, tin 4-50, antimony 0-7, and cadmium 0-2%, and melting between 202° and 287° C. were investigated. The best substitute for tin-rich solders was found to be the alloy of lead 85 and tin 15%, which has an impact strength of 5.75 kg./cm.² (at 183° C., 78 kg./cm.²), and an ultimate tensile strength of 1.83 kg./mm.² (at 183° C., 7.26-7.93 kg./mm.²).—N. A.</p>																			
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1ST ORDER										2ND ORDER									
3RD ORDER										4TH ORDER									

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PRECEDENCE AND PRECEDENCE INDEX																			
<p>X-Ray Control of Soldered Joints in Copper Tubes. V. S. Cherniak (Zavod. Lab. (Works' Lab.), 1938, 7, 102-104; C. Abt., 1938, 32, 4130).—The application of the X-ray method in the detection and control of the defects in soldered joints in copper tubes is discussed and illustrated.—N. B. V.</p>																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
1st and 2nd copies 3rd and 4th copies 5th and 6th copies 7th and 8th copies 9th and 10th copies 11th and 12th copies 13th and 14th copies 15th and 16th copies 17th and 18th copies 19th and 20th copies 21st and 22nd copies 23rd and 24th copies 25th and 26th copies 27th and 28th copies 29th and 30th copies 31st and 32nd copies 33rd and 34th copies 35th and 36th copies 37th and 38th copies 39th and 40th copies 41st and 42nd copies 43rd and 44th copies 45th and 46th copies 47th and 48th copies 49th and 50th copies 51st and 52nd copies 53rd and 54th copies 55th and 56th copies 57th and 58th copies 59th and 60th copies 61st and 62nd copies 63rd and 64th copies 65th and 66th copies 67th and 68th copies 69th and 70th copies 71st and 72nd copies 73rd and 74th copies 75th and 76th copies 77th and 78th copies 79th and 80th copies 81st and 82nd copies 83rd and 84th copies 85th and 86th copies 87th and 88th copies 89th and 90th copies 91st and 92nd copies 93rd and 94th copies 95th and 96th copies 97th and 98th copies 99th and 100th copies										1st and 2nd copies 3rd and 4th copies 5th and 6th copies 7th and 8th copies 9th and 10th copies 11th and 12th copies 13th and 14th copies 15th and 16th copies 17th and 18th copies 19th and 20th copies 21st and 22nd copies 23rd and 24th copies 25th and 26th copies 27th and 28th copies 29th and 30th copies 31st and 32nd copies 33rd and 34th copies 35th and 36th copies 37th and 38th copies 39th and 40th copies 41st and 42nd copies 43rd and 44th copies 45th and 46th copies 47th and 48th copies 49th and 50th copies 51st and 52nd copies 53rd and 54th copies 55th and 56th copies 57th and 58th copies 59th and 60th copies 61st and 62nd copies 63rd and 64th copies 65th and 66th copies 67th and 68th copies 69th and 70th copies 71st and 72nd copies 73rd and 74th copies 75th and 76th copies 77th and 78th copies 79th and 80th copies 81st and 82nd copies 83rd and 84th copies 85th and 86th copies 87th and 88th copies 89th and 90th copies 91st and 92nd copies 93rd and 94th copies 95th and 96th copies 97th and 98th copies 99th and 100th copies									

COMMON ELEMENTS		1ST AND 2ND ORDER		1ST AND 2ND ORDER																													
PROCESSES AND PROPERTIES INDEX																																	
<p>5</p> <p>18</p> <p>Properties of Low-Nickel Steels at Low Temperatures. V. Chernyak and V. Yanchevskiy. (Stal, 1930, No. 10-11, pp. 60-67). (In Russian). The authors investigated the effect of cooling to low temperatures on the mechanical properties of three chromium-nickel steels of the following analyses:</p> <table border="1"> <thead> <tr> <th></th> <th>ET 100</th> <th>ET 100</th> <th>ET 130</th> </tr> </thead> <tbody> <tr> <td>Carbon %</td> <td>0.07</td> <td>0.19</td> <td>0.08</td> </tr> <tr> <td>Silicon %</td> <td>0.04</td> <td>0.21</td> <td>0.06</td> </tr> <tr> <td>Manganese %</td> <td>...</td> <td>9.58</td> <td>16.35</td> </tr> <tr> <td>Phosphorus %</td> <td>0.011</td> <td>...</td> <td>0.033</td> </tr> <tr> <td>Chromium %</td> <td>10.8</td> <td>13.8</td> <td>12.00</td> </tr> <tr> <td>Nickel %</td> <td>1.22</td> <td>4.32</td> <td>0.35</td> </tr> </tbody> </table> <p>Tensile, hardness and impact tests were made at +20°, 80° and -182° C. Repeated cooling to low temperatures appeared to have no effect on the mechanical properties of the steels as measured subsequently at room temperature. The impact strengths determined at -182° C. were 82%, 90% and 37% below the results obtained at room temperature for steels ET 130, ET 180, and ET 100, respectively.</p>							ET 100	ET 100	ET 130	Carbon %	0.07	0.19	0.08	Silicon %	0.04	0.21	0.06	Manganese %	...	9.58	16.35	Phosphorus %	0.011	...	0.033	Chromium %	10.8	13.8	12.00	Nickel %	1.22	4.32	0.35
	ET 100	ET 100	ET 130																														
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Manganese %	...	9.58	16.35																														
Phosphorus %	0.011	...	0.033																														
Chromium %	10.8	13.8	12.00																														
Nickel %	1.22	4.32	0.35																														
<p>AND S.S.A. METALLURGICAL LITERATURE CLASSIFICATION</p> <p>SECTION 111</p> <p>SECTION 111</p> <p>SECTION 111</p>																																	

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSING AND PROPERTY INDEX																																																			
<p>The Fatigue Strength of Steels at Low Temperatures. I. V. Kudryavtsev and V. S. Chernyak. (Vestnik Metallopromyshlennosti, 1939, No. 12, pp. 40-44). (In Russian). Earlier work on the low-temperature fatigue strengths of steels carried out at temperatures down to -40°C. is briefly reviewed. The authors' work was carried out at $+20^{\circ}$, -75° and -183°C. The steels used were: (1) E-8 containing carbon 0.34%, manganese 0.40%, silicon 0.27%, sulphur 0.008%, phosphorus 0.037%, chromium 1.30% and nickel 3.28%; and (2) St-3 containing carbon 0.15%, manganese 0.51%, silicon 0.00% and phosphorus 0.001%. Electric welds in the construction of liquid-air apparatus of steel St-3 were also tested. The two steels exhibited marked increases in tensile strength, yield point and fatigue strength as the temperature was lowered.</p>																																																			
<p>ASME STEEL METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
TENSILE STRENGTH																										YIELD POINT																									
TENSILE STRENGTH																										YIELD POINT																									

[illegible]

Mechanical Properties of Arc-Welded Chromium-Nickel Steel at Low Temperatures. V. S. Chernyak, Z. I. Golubeva and L. A. Steinberg. (Avtogennoe Delo: Welding Journal, 1943, vol. 22, Sept., pp. 437-8-438-8). The results of tensile and impact tests at +20°, 40°, 75° and -183° C. on weld metal and parent metal of welded and unwelded 18/8 stainless steel plates are presented. The tensile strength of the weld metal increased from 97,000 to 156,000 lb. per sq. in. on lowering the temperature from +20° to -183° C. The impact strength of the parent metal in the unwelded state remained the same at all the above temperatures, but for welded specimens it decreased by 50% on reducing the temperature to -183° C.

CA

The danger of fire from the valves of oxygen cylinders.
V. S. Chernyak and S. G. Gusev. *Artyeznaya Dela* 1947,
No. 1: 17-21; *Chem. Zvest.* (Russian Zone Ed.) 1948, II,
1230. — Packing of fiber, elastite, etc., should be of very
pure materials and is best replaced by plastic material.

The internal parts of the valve should be of nonferrous
metal. M. G. Moore

CHERNYAK, V. S. AND OTHERS

Apparatura dlia gazovoi svarki i rezki; rukovodstvo po remontu. Izd. 2
Sverdlovsk, Mashgiz, 1947. 163 p. diagrs.

Equipment for gas welding and cutting; manual on repair work.

DLC: TS227. C543 1947

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of
Contress, 1953

CHERNIAK, V. S. and FAL'KEVICH, A. S.

Rukovodstvo po gazovoi svarke i rezke. Dlia kursov tekhnicheskogo mashinostroit.
promyshl. 4. perer. izd. Moskva, Mashgiz, 1947. 191 p. illus.

Manual of gas welding and cutting.

DLC: TS227.F32 1947

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of
Congress, 1953.

CHERNYAK, V. S.

PA 19/49T37

USSR/Engineering
Cutting Torches
Cutting, Gas

Jun 48

"New Machines and Equipment for Gas-Flame Working
of Metals," V. S. Chernyak, Engr, Yu. Ya. Shafit,
Engr, 4 3/4 pp

"Avtogennoye Delo" No 6

Treats subject under following: (1) semiautomatics and
automatics for oxygen cutting, (2) appliances for
"minor mechanization" of gas-cutting processes, (3)
equipment and apparatus for surface treatment, (4)
equipment for gas-pressure welding and (5) high-pres-
sure acetylene generators.

19/49T37

CHERNYAK, V. S.

941036

Svarka i obrabotka metallov gazo-kislородnym plamenem. Moscow, 1950. 283 p.

The theory and techniques of acetylene welding and cutting, description of fuel gases and apparatus needed in their production, technology of gas pressure welding and of tempering, description of equipment needed in welding and inspection methods, used to raise qualifications of foremen and workers in the field of acetylene welding: published as a Govt. Scientific-Technical Edition of Machine Construction Literature.

1. Russia - Welding
2. Russia - Metallurgical Industry
3. Russia - Physics - Research
- i. Welding and Processing of metals with gas-oxygen flame
- ii. Title
- iii. Chernyak, V. S.

CHERNYAK, V. S.

USSR/Engineering - Welding, Equipment Oct 51

"New GOST for Acetylene Generators," V. S.
Chernyak, A. A. Morkovkin, Engineers

"Avtogen Delo" No 10, pp 30, 31

Illustrates, by several examples, violation of safety rules and basic principles which occurred in fabrication of acetylene generators before May 1950, when new GOST 5190-49, developed by VNIIAvtogen, was accepted. Generators are classified according to productive capacity, type of installation, max pressure and method for bringing calcium carbide and water into contact.

202T46

DOLGITSER, I.Z.; MORKOVKIN, A.A.; CHERNYAK, V.S.; GLIZMANENKO, D.L., kandidat
tehnicheskikh nauk, retsenzent; SERGEYEV, N.P., inzhener, redaktor.

[Apparatus and equipment for gas welding and cutting of metals: brief
manual on operation and repair] Apparatura i oborudovanie dlia gazo-
plamennoi obrabotki metallov; kratkoe posobie po ekspluatatsii i remontu.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.i sudostroit. lit-ry,
1953. 191 p. (MLRA 7:6)

(Oxyacetylene welding and cutting)

CHERNYAK, V. S. and FAL'KEVICH, A. S.

Svarka i obrabotka metallov gazo-kislородnym plamenem. Moskva, Mashgiz, 1950.
283 p. illus.

Welding and metal working by oxyacetylene flame.

DLC: TS227.F33

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Congress, 1953.

SEMYACHKIN, S.Ye.; FILARETOV, G.V.; CHERNYAK, V.S., nauchnyy redaktor;
KONTSEVAYA, E.M., redaktor; TORSHINA, Ye.A., tekhnicheskiy
redaktor.

[Welded roofs] Svarnye krovli. Moskva, Vses.uchebno-pedagog.
izd-vo Trudrezervizdat, 1956. 41 p. (MIRA 9:6)
(Roofing--Welding)

5(1)

AUTHOR:

Chernyak, V. S., Engineer

SOV/67-58-6-5/22

TITLE:

New GOST for Gaseous Technical and Medicinal Oxygen (Novyy GOST na gazoobraznyy tekhnicheskiy i meditsinskiy kislorod)

PERIODICAL:

Kislorod, 1958, Nr 6, pp 22 - 24 (USSR)

ABSTRACT:

The Committee of Standards, Measures and Measuring Instruments of the Soviet Cabinet Council, introduced the GOST 5583-58 in July 1958 to replace the GOST 5583-50. It will be enforced on January 1, 1959. Quality is improved and the range of applicability is widened. The development of new standards had become imperative as the new methods of metal processing (metalization, hardening, melting, cutting with gas torches) called for a higher degree of purity in oxygen. Investigations of the cutting process carried out by A. K. Ninburg (VNIIAvtogen) are mentioned. An insufficient degree of purity leads to a decrease of the cutting speed and the cutting surface is enlarged. Three types of oxygen are now produced with the purity degrees 99.2, 99.5, 99.8%. The humidity content had not been standardized in the past. Its admissable limit was fixed to be 0.07 g/m^3 . The new standards

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New GOST for Gaseous Technical and Medicinal Oxygen

SOV/67-58-6-5/22

call for purest oxygen, medicinal oxygen in the first place -
to be obtained from water by electrolysis. There are 3
figures and 5 references, 4 of which are Soviet.

Card 2/2

SOV/137-58-7-15173

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 179 (USSR)

AUTHORS: Brinberg, I.L., Kochanovskiy, N.Ya., Chernyak, V.S.

TITLE: Modern Welding Equipment and Problems of Its Design (Sovremennoye sostoyaniye i zadachi v oblasti konstruirovaniya svarochnogo oborudovaniya)

PERIODICAL: V sb.: Sovrem. napravleniya v obl. konstruirovaniya tekhnol. oborud. Moscow, Mashgiz, 1957, pp 242-265

ABSTRACT: The design of modern welding equipment (E) must be directed along the lines of further development of such widely employed welding (W) methods as arc, resistance, and electric slag W, as well as gas-flame treatment of metal. An immediate task in mechanization of manual arc welding (in the case of short-run and single-unit production) is the design of universal welding tilters and manipulators with mechanical, pneumatic, hydraulic, and magnetic devices capable of handling stock weighing 0.1-50 t. The design of W E employing electrodes must include provisions for the creation of automatic production lines for continuous manufacture of electrodes. E for automatic submerged and gas-shielded W is described briefly,

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SOV/137-58-7-15173

Modern Welding Equipment and Problems of Its Design

together with the most advanced types of design of such E. Recommendations are given for the construction of improved W heads, supporting rollers, trucks, pumps for drawing off of flux, feeding mechanisms, etc. Electric slag W E is examined together with the E supplying the electrical power. Means of further improvement of design of electric slag W E are outlined; they include resistance-slag W, W with laminated and combined electrodes, W of structures with curved seams, building up of metal surfaces by means of W, etc. A survey of modern resistance W E is given. Latest machines for resistance W E is given. Latest machines for resistance W are described briefly; this includes the MTK-01 machine for spot welding of metal 0.01 to 0.1 mm thick; the ATMS-14 x 75 machine for manufacturing of columns, grids, and frameworks employed in reinforced-concrete structures, and the MShShI-40 machine for seam welding of components made of Al alloys with a thickness varying from 0.8 mm to 2 mm, etc. Goals in the design of resistance W E are presented in detail; they include the following: Creation of three-phase-single-phase power circuitry; employment of direct (rectified) low-frequency current; extensive employment of electronics, semiconductors, and pneumatic-hydraulic devices in the circuits of the W machines; creation of E capable of controlling the quality of welded connections. An abbreviated description of modern E for gas-flame treatment

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SOV/137-58-7-15173

Modern Welding Equipment and Problems of Its Design

of metals includes the following topics: Oxygen cutting, gas welding, surface hardening, metallization, gas-flame spraying on of plastics. Requirements that must be satisfied by the newly produced E are formulated. 15 drawings and photographs are included. Bibliography: 29 references.

B.K.

1. Welding--Equipment

Card 3/3

CHERNYAK, V.S.

SUBJECT: USSR/Welding

135-7-16/16

AUTHOR: Chernyak, V.S., Engineer

TITLE: The book "Gas-Welder's Manual", by V.V. Rybakov (Mashgiz, 1956).
(O knige V.V. Rybakova "Uchebnik gazosvarshchika").

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 7, p 32 (USSR)

ABSTRACT: The article represents a critical review of a book which the surveyor considers a necessary one in view of the acute lack of literature on the subject and the fast growth of the production of gas-welding equipment, which in 1955 attained 793% of the output of 1940, but criticizes some omissions and some wrong statements contained in the Book.

For instance, the term "chemical welding" was applied to gas-welding and welding by forging; the statement that "good low-carbon steel has an impact resistance of 0-15 kg/cm²", as steel with a resistance limit equal to zero is not good. Data are given on gasoline as a replacement for acetylene, while kerosene is not mentioned at all. Actually, kerosene is much more widely used since 90,000 kerosene cutters are produced annually which may be adapted for using gasoline, while gasoline cutters as

Card 1/2

135-7-16/16

TITLE: The book "Gas-Welder's Manual", by V.V. Rybakov (Mashgiz, 1956).
(O knige V.V. Rybakova "Uchebnik gazosvarshchika")

such are not produced. The data on granulation of calcium carbide is obsolete, as well as some of the generators and cutters described; the widely used "ACU"-machines and the slag welding method are not mentioned. The described gas-welding technology for pipes is never applied in practice and only exists in technical literature, besides, gas-welding of pipes is slow and uneconomical as compared with electric welding.

ASSOCIATION: Not stated.

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

VASIL'YEV, Kirill Vasil'yevich; SHAPIRO, Il'ya Samoylovich; CHERNYAK,
V.S., nauchnyy red.; SITNIKOV, L.P., red.; GOROKHOV, Yu.N.,
tekhn.red.

[Electric-arc cutting of metals] Dugovaia elektricheskaya rezka
metallov. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat,
1958. 64 p.

(Electric metal cutting)

(MIRA 12:1)

SEMYACHKIN, Sergey Yefremovich; FILARETOV, Gleb Vasil'yevich; CHERNYAK,
V.S., nauchnyy red.; RYCHEK, T.I., red.; TOKER, A.M., tekhn.red.

[Electric resistance welding] Kontaktnaya elektrosvarka. Moskva,
Vses.uchebno-pedagog. izd-vo "Trudrezervizdat," 1958. 125 p.
(Electric welding) (MIRA 11:12)

PHASE I BOOK EXPLOITATION

968

Chernyak, Viktor Samuilovich, Engineer, and Voshchanov, Konstantin Pavlovich,
Engineer

Spravochnik molodogo svarkhchika (Handbook for the Young Welder) Moscow,
Trudrezervizdat, 1958. 479 p. 65,000 copies printed.

Scientific Ed.: Shukhgal'ter, L. Ya., Candidate of Tech. Sciences; Ed.:
Rychev, T.I.; Tech. Ed.: Rakov, S.I.

PURPOSE: The book is intended primarily for young welders who have completed vocational and railroad schools. It may also be of use to workers, foremen and technicians engaged in welding.

COVERAGE: The authors describe modern welding equipment and materials, the latest technology of welding, and the optimum conditions for welding ferrous and nonferrous metals. They also deal with new high-production methods of welding, inspection of weldments, hard-facing, oxygen cutting and safety measures which must be taken to insure safe welding practice. No personalities are mentioned. There are 36 Soviet references.

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